

Application No.: 10/696,246

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Docket No.: 509982005700

**REMARKS**

Claims 1-25 were pending in the present application. In the final Office Action mailed on September 22, 2005, the Examiner rejected claims 1, 2, 10, 13, 14, 22, and 25. Claims 1-25 are currently under consideration. Applicants request reconsideration of the pending claims in view of the following remarks.

**I. Claim Rejections – 35 USC 102**

The Examiner has maintained the rejection of claims 1 and 13 under 35 USC 102(b) as being anticipated by U.S. Patent No. 4,898,471 (the Stonestrom reference).

**Examiner's rationale in the final Office Action does not form basis for rejection of a method claim.**

In the final Office Action, the Examiner states, "Applicant does not show the different structures and purposes between a range of azimuth angles as disclosed by Applicant's present invention and Stonestrom et al's range of azimuth angles ... since all the features of a range of azimuth angles ... have the same functions for scanning or rotating the structure of wafers during illuminating light beam to the structure of wafer to detecting the scattered light from wafer at constant spatial interval."

Applicants assume that the Examiner is asserting that the Applicants have failed to show that the claims are structurally distinguishable from the prior art. Applicants note, however, that the Examiner is applying a standard for anticipation for apparatus claims (See MPEP 2114) in rejecting a method claim (i.e., method claim 1). Applicants assert that there is no requirement for a method claim to "show the different structures ..." as asserted by the Examiner. Thus, Applicants assert that the Examiner's rejection of method claim 1 based on the grounds set forth in the final Office Action is improper.

With respect to system claim 13, Applicants assert that it is improper for the Examiner to ignore language from a claim, even if the language is, *arguendo*, functional language. Indeed, in

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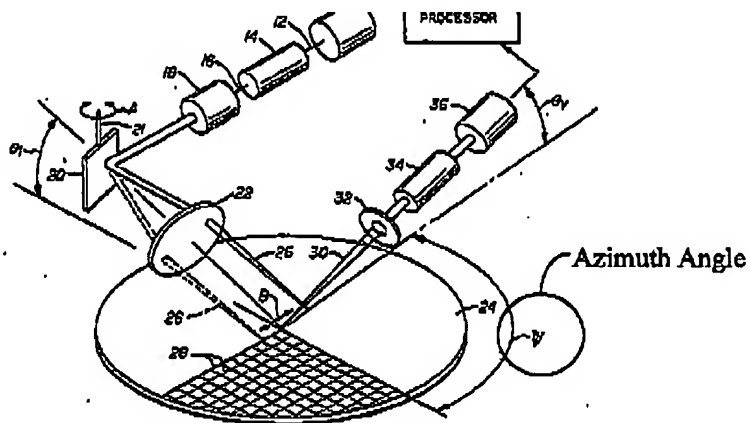
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*Intel Corp. v. United States Int'l Trade Comm'n*, the Federal Circuit interpreted functional language in an apparatus claim as requiring that an accused apparatus possess the capability of performing the recited function. 946 F.2d 821, 832 (Fed. Cir. 1991); see also *R.A.C.C. Indus. v. Stun-Tech, Inc.*, 1998 U.S. App. LEXIS 30769 (Fed. Cir. 1998) and *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311 (Fed. Cir. 2004).

For the reasons set forth in more detail below, Applicants assert that the system disclosed in the Stonestrom reference is not capable of scanning over the azimuth angle as defined by the current application and is not capable of measuring the cross polarization component of the incident beam.

**The definition of an azimuth angle in the Stonestrom reference is different than the current application.**

First, Applicants assert that the definition of the azimuth angle in the Stonestrom reference is different than the definition in the current application. According to the Stonestrom reference, "the collection system is oriented ... at an azimuthal angle  $\Psi$  relative to the incident beam direction" (col. 4, lines 64-68 and col. 5, lines 1-2). Thus, in the Stonestrom reference, the azimuth angle ( $\Psi$ ) is defined between the incident beam and the detector (See Fig. 1 below).



**Fig. 1 from the Stonestrom reference with Applicants' Markup**

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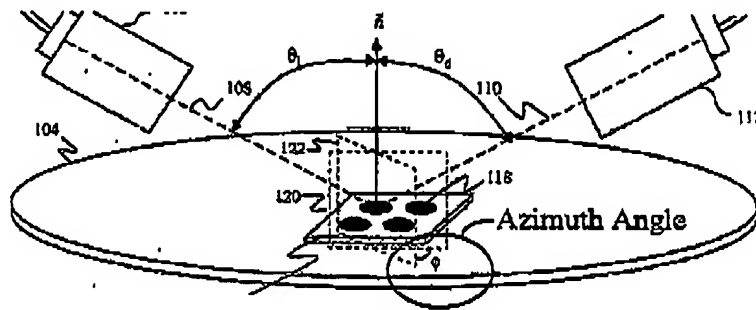
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In contrast, in the present application, azimuth angle ( $\phi$ ) is defined as "the angle between the plane of incidence beam 108 (incidence plane 122) and the direction of periodicity of grating array 102 (grating plane 120)." (See, Fig. 1 below and page 3, par. [0022]).



**Fig. 1 from the Present Application with Applicants' Markup**

Thus, the azimuth angle ( $\Psi$ ) as defined in the Stonestrom reference is different than the azimuth angle ( $\phi$ ) as defined in the present application. Thus, the Stonestrom reference does not disclose the azimuth angle ( $\phi$ ) as defined in the present application (i.e., an angle between the plane of incident beam and the direction of periodicity of the grating array).

**The Stonestrom reference does not scan a range of azimuth angles.**

As set forth above, Applicants assert that the Stonestrom reference does not disclose the azimuth angle ( $\phi$ ) as defined in the present application. Thus, it follows that the Stonestrom reference does not disclose scanning a range of azimuth angle ( $\phi$ ) as defined in the present application.

Applicants also assert that the Stonestrom reference does not disclose scanning a range of azimuth angle ( $\Psi$ ) as defined in the Stonestrom reference. In particular, as can be seen in Fig. 1 of the Stonestrom reference (replicated below), Applicants assert that the cited portions of the Stonestrom reference (col. 3, lines 50-51 and col. 5, lines 7-35) only disclose scanning the incident

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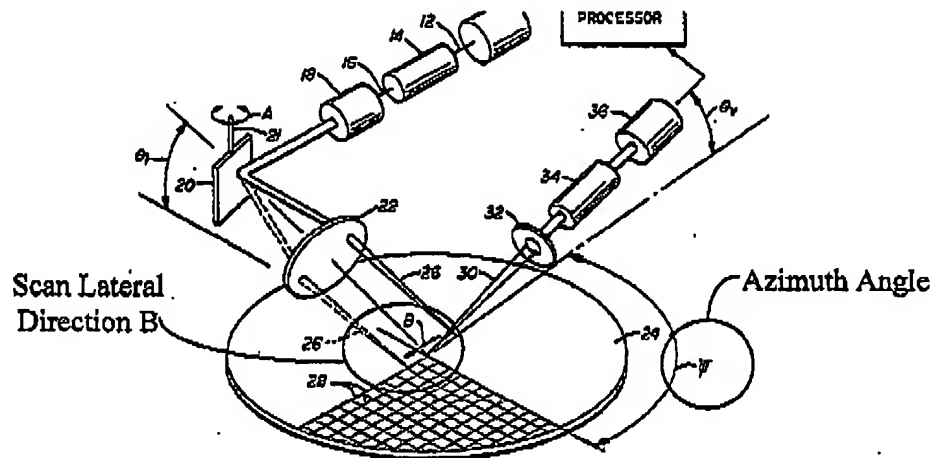
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beam in lateral direction (B) on a wafer and not over a range of azimuth angles ( $\Psi$ ) as defined in the Stonestrom reference.



**Fig. 1 from the Stonestrom reference with Applicants' Markup**

The azimuth angle ( $\Psi$ ) as defined in the Stonestrom reference is the angle between the incident beam and the detector (see, Fig. 1 above). In the scan, as disclosed by the Stonestrom reference, "[a] deflection mirror 20 pivots, as indicated by the arrows A, about axis 21 causing the beam to scan over the wafer 24 as indicated by arrows B" (see, Fig. 1 above and col. 4, lines 14-17). Thus, the scan is focused onto different points on the wafer surface as depicted by the arrow B and is not over the azimuth angles ( $\Psi$ ) as defined in the Stonestrom reference.

Furthermore, since the configuration of the system disclosed in the Stonestrom reference only allows for laterally scanning over the surface of the wafer, it precludes the system disclosed in the Stonestrom reference from scanning over the azimuth angle ( $\Psi$ ) as defined in Stonestrom, which would require focusing on the same point but at different angles.

Thus, the Stonestrom reference does not disclose scanning a range of azimuth angle ( $\varphi$ ) as defined in the present application or azimuth angle ( $\Psi$ ) as defined in the Stonestrom reference.

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**The Stonestrom reference does not measure cross-polarized light.**

In addition, Applicants assert that the Stonestrom reference fails to teach or even suggest, in the case of claim 1, "measuring the cross polarization component of diffracted beams during the azimuthal scan" or, in the case of claim 13, "a detector to measure the cross polarization component of diffracted beams during the azimuthal scan". In contrast, the Stonestrom reference discloses, when referring to Fig. 1 in the Stonestrom reference, that "[t]he resulting polarized beam 16 has a polarization which is substantially parallel to the surface of a wafer 24" (col 4, lines 9-11) and "[a] polarizing filter 34, similar to polarizer 14, polarizes the collected light parallel to the surface of a wafer 24. The collected light is finally detected by a detector 36 ... ." (Col 4, lines 50-53).

Thus, the incident beam and the collected beam, of the Stonestrom reference, are both parallel to the surface of a wafer and are co-polarized and not cross-polarized. Further, having polarizing filters 14 and 34, which are parallel to the surface of the wafer, precludes the Stonestrom reference from measuring the cross-polarization component of the incident beam.

In view of the above arguments, the rejection of claims 1 and 13 should be withdrawn.

**II. Claim Rejections – 35 USC 103**

Claims 2 and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Stonestrom reference in view of U.S. Patent No. 4,837,603 (the Hayashi reference). Claims 2 and 14 depend from claims 1 and 13, respectively. Thus, Applicants assert that claims 2 and 14 are allowable for at least the reason that they depend from allowable independent claims.

Claims 10, 22, and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Stonestrom reference in view of U.S. Patent No. 6,819,426 (the Sezginer reference). Claims 10 and 22 depend from claims 1 and 13, respectively. Thus, Applicants assert that claims 10 and 22 are allowable for at least the reason that they depend from allowable independent claims.

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Claim 25 recites, in part, "scanning an incident beam over a range of azimuth angles to obtain an azimuthal scan of the structure" and "measuring the cross polarization component of diffracted beams during the azimuthal scan." For the reasons set forth above with regard to claim 1, Applicants assert that the Stonestrom reference does not disclose these claim limitations. Thus, Applicants assert that claim 25 is allowable over the combination of the Stonestrom reference and the Sezginer reference.

### III. Allowable Subject Matter

Claims 3-9, 11-12, 15-21, and 23-24 were objected to as being dependent upon a rejected base claim. For the reasons set forth above, Applicants assert that these claims depend from allowable base claims, and are thus allowable.

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**IV. Conclusion**

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, Applicants petition for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 509982005700. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: November 18, 2005

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